UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/686,120	10/11/2000	Gilbert Ho Yin Tsang	SNY-P3965	4933

24337   7590   10/18/2005

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EXAMINER
SALTARELLI, DOMINIC D

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	09/686,120	TSANG ET AL.
Office Action Summary	Examiner	Art Unit	
	Dominic D. Saltarelli	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>17 August 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-37 and 58-91</u> is/are pending in the application.

    4a) Of the above claim(s) <u>38-57</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-37 and 58-91</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>8/17/05</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments, see pages 1-4 of applicant's submitted pre-appeal brief remarks, filed August 17, 2005, with respect to the rejection of claim 1 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of the Data-Over-Cable Service Interface Specification SP-CMCI-I02-980317 [DOCSIS] and RFC 2131: Dynamic Host Configuration Protocol [DHCP].

2.   Regarding the use of 10 character ASCII strings, a feature previously traversed by applicant, examiner submits Aoyagi et al. (4,751,674), who teaches it is well known to name objects with 10 character strings (col. 5, lines 29-44).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-3, 5, 12-15, 17-19, 21, 27-30, 32, 58-60, 62, 74-78, 80, and 87-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim et al. (5,884,024, of record) [Lim] in view of DOCSIS, DHCP, and Slezak (6,006,257, of record).

Regarding claims 1, 17, 58, 76, and 90, Lim discloses a client system (fig. 1, client system 102, col. 4, lines 47-54) configured with a modem (fig. 1, cable

modem 104) and a Main Circuit Board (an inherent feature of computer based client systems), wherein the Main Circuit Board is connected to the modem via an interconnection (as shown by the interconnection between 102 and 104 in fig. 1), wherein the Main Circuit Board determines the IP address of the modem (also an inherent feature, as a client device connected to the modem needs the modem's IP address in order to use the modem to communicate over the Internet), wherein, at the modem:

Lim fails to disclose periodically broadcasting a Discovery Packet over the interconnection from the modem to the Main Circuit Board by addressing the Discovery Packet to a broadcast address that can be received by the Main Circuit Board, the Discovery Packet comprising the IP address of the modem in order to permit the Main Circuit Board to learn the modem's IP address and monitoring the interconnection for receipt of broadcast Discovery Packets addressed to the broadcast address and receiving the broadcast Discovery Packet addressed to the broadcast address at the Main Circuit Board from the modem over the interconnection and ascertaining the IP address of the modem from the broadcast Discovery Packet, and wherein the client system is a set top box.

In an analogous art, DOCSIS teaches a standardized format for enabling communications between a cable modem and customer premises equipment (page 9, section 1.1), wherein adherence to said standard is to include in the cable modem an internal DHCP server (see fig. 3-3), wherein the existence of an

internal DHCP server within the modem is used for reference and informational

purposes regarding the IP address of the modem (see fig. 3-1 and table 3-1).

It would have been obvious at the time to a person of ordinary skill in the

art to modify the system disclosed by Lim to include an internal DHCP server in

the modem, as taught by DOCSIS, for the benefit of conforming to the

established DOCSIS standard for cable modem communications.

Lim and DOCSIS fail to disclose **periodically** broadcasting a Discovery

Packet over the interconnection from the modem to the Main Circuit Board by

addressing the Discovery Packet to a broadcast address that can be received by

the Main Circuit Board, the Discovery Packet comprising the IP address of the

modem in order to permit the Main Circuit Board to learn the modem's IP

address and monitoring the interconnection for receipt of broadcast Discovery

Packets addressed to the broadcast address and receiving the broadcast

Discovery Packet addressed to the broadcast address at the Main Circuit Board

from the modem over the interconnection and ascertaining the IP address of the

modem from the broadcast Discovery Packet, and wherein the client system is a

set top box.

In an analogous art, DHCP teaches allocation of IP addresses to clients

(page 12, section 2.2) involves 'leasing' an IP address for a finite period of time

(page 20, section 3.3), wherein there is a periodic exchange of messages

between the server and client during the RENEWING state of an IP lease (page

32, DHCPREQUEST generated during a RENEWING state, and page 35, fig. 5,

which shows the periodic exchange of DHCPREQUEST and DHCPACK

messages between a client and server, see also page 40, section 4.4.5), wherein

the DHCPACK messages contain the IP address being leased (in the yiaddr

field, as shown on page 28), and the DHCPACK message is utilized by the client

to learn the IP address (for renewing the lease). The DHCP specification

suggests that DHCP should be used to reacquire or verify IP addresses and

network parameters in local networks, as local network configurations may

change without the client's or user's knowledge (page 22, section 3.7).

It would have been obvious at the time to a person of ordinary skill in the

art to modify the system disclosed by Lim and DOCSIS to include periodically

broadcasting a Discovery Packet [DHCPACK] over the interconnection from the

modem [internal DHCP server] to the Main Circuit Board [CPE] by addressing the

Discovery Packet to a broadcast address that can be received by the Main

Circuit Board (the message is addressed to the client), the Discovery Packet

comprising the IP address of the modem in order to permit the Main Circuit Board

to learn the modem's IP address and monitoring the interconnection for receipt of

broadcast Discovery Packets addressed to the broadcast address and receiving

the broadcast Discovery Packet addressed to the broadcast address at the Main

Circuit Board from the modem over the interconnection and ascertaining the IP

address of the modem from the broadcast Discovery Packet, as taught by DHCP,

for the benefit of verifing IP addresses in local networks, as local network

configurations may change without the client's or user's knowledge.

Lim, DOCSIS, and DHCP fail to disclose the client system is a set top box.

In an analogous art, Slezak teaches connecting a set top box to a cable modem, providing Internet access and specialized content to a user via their television (col. 4 line 65 – col. 5 line 10).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Lim, DOCSIS, and DHCP to interconnect the modem to a set top box, as taught by Slezak, for the benefit of providing Internet access and specialized content to a user via their television, enhancing functionality to their television systems.

Regarding claims 2, 3, 5, 18, 19, 21, 59, 60, 62, 77, 78, and 80, Lim, DOCSIS, DHCP, and Slezak disclose the method and apparatus of claims 1, 17, 58, and 76, but fail to disclose the authentication code in the Discovery Packet (xid field in the exchanged messages, page 10 of DHCP), wherein the Main Circuit Board, upon receiving the Discovery Packet, inspects the authentication code to assure that the IP address in the Discovery Packet originated at the modem.

Lim, DOCSIS, DHCP, and Slezak fail to disclose the authentication code comprises a 10 character ASCII string.

Examiner takes official notice that the use of 10 character ASCII strings is notoriously well known in the art.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the system disclosed by Lim, DOCSIS, DHCP, and Slezak to

include the authentication code comprises a 10 character ASCII string.

Regarding claims 12, 27, and 87, Lim, DOCSIS, DHCP, and Slezak

disclose the method and apparatus of claims 1, 17, and 76, but fail to disclose

the Discovery Packet is transmitted approximately every 30 seconds.

Examiner takes official notice that it is notoriously well known in the art to

perform periodic broadcasts of information every 30 seconds, as this is a

convenient time frame for periodic broadcasts.

it would have been obvious at the time to a person of ordinary skill in the

art to modify the method and apparatus disclosed by Lim, DOCSIS, DHCP, and

Slezak to transmit the Discovery Packet approximately every 30 seconds, for the

benefit of performing the periodic broadcast in a convenient time frame.

Regarding claims 13, 28, and 88, Lim, DOCSIS, DHCP, and Slezak

disclose the method and apparatus of claims 1, 17, and 76, wherein the modem

is a cable modem (Lim, cable modem 104 in fig. 1).

Regarding claims 14 and 29, Lim, DOCSIS, DHCP, and Slezak disclose

the method and apparatus of claims 1 and 17, wherein the modem further

includes a processor that controls functions of the modem and wherein the

processor is a device separate from any processor device residing on the Main

Circuit Board (an inherent feature, as the modem is a separate, external device

to the client system to which it is connected, see Lim, fig. 1).

Regarding claims 15, 74, and 89, Lim, DOCSIS, DHCP, and Slezak

disclose the method and apparatus of claims 1, 58, and 76 wherein the

Discovery Packet is communicated using User Datagram Protocol (DOCSIS, fig.

3-3, wherein signals sent from the internal DHCP server of the modem first

passes through a UDP stack before being passed along to the host CPE).

Regarding claims 30 and 75, Lim DOCSIS, DHCP, and Slezak disclose

the apparatus of claims 17 and 58, wherein the interconnection is a USB

interconnection (DOCSIS, fig. 3-3).

Regarding claim 32, Lim, DOCSIS, DHCP, and Slezak disclose the

apparatus of claim 17, wherein the means for periodically transmitting a

Discovery Packet inherently includes the use of a programmed processor in the

modem, as there are no other means available by which packets may be

processed and transmitted that do not include programmed processors.

5.   Claims 7-10, 23-26, 64, 65, and 82-85 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Lim, DOCSIS, DHCP, and Slezak as applied to claims 1, 17,

58, and 80 above, and further in view of Koperda (5,790,806, of record).

Regarding claims 7, 23, and 64, Lim, DOCSIS, DHCP, and Slezak

disclose the method and apparatus of claims 1,17, and 58, but fail to disclose the

Discovery Packet further comprises a status code indicative of the running status

of the modem.

In an analogous art, Koperda teaches providing status information from a

modem to a main circuit (col. 12, lines 13-19), for the benefit of allowing the main

circuit to monitor the health and status of the modem.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the method and apparatus disclosed by Lim and Slezak to include a

status code indicative of the running status of the modem, as taught by Koperda,

for the benefit of allowing the main circuit to monitor the health and status of the

modem for enhanced reliability and troubleshooting purposes.

Regarding claims 9, 25, and 26, Lim, DOCSIS, DHCP, Slezak, and

Koperda disclose the method and apparatus of claims 7 and 23, but fail to

disclose the status code comprises a four-byte integer code representing the

running status of the modem.

Examiner takes official notice that it is notoriously well known in the art to

utilize 4 byte integers as codes within packets, as this represents a very large

number of possible unique codes, providing a very comprehensive selection of codes for transmitting information.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method and apparatus disclosed by Lim, DOCSIS, DHCP, Slezak, and Koperda to utilize four byte integer codes representing the running status of the modem, for the benefit of having a wide range of possible status codes available and allowing for very comprehensive reporting of status information.

Regarding claims 8, 10, 24, and 65, Lim, DOCSIS, DHCP, Slezak, and Koperda disclose the method and apparatus of claims 7, 9, 23, and 64, but fail to disclose the status code is encrypted.

The official notice taken that it is notoriously well known in the art to encrypt data packets to enhance security taken by the by examiner was not successfully traversed by the applicant, and is thus taken by an admission of the fact presented.

Therefore, it would have been obvious at the time to a person of ordinary skill in the art to modify the method and apparatus of Lim, DOCSIS, DHCP, Slezak, and Koperda to encrypt the status code, for the benefit of enhancing security.

Regarding claim 82, Lim, DOCSIS, DHCP, Slezak disclose the apparatus

of claim 80, but fail to disclose the Discovery Packet further comprises a status

code indicative of the running status of the modem.

In an analogous art, Koperda teaches providing status information from a

modem to a main circuit (col. 12, lines 13-19), for the benefit of allowing the main

circuit to monitor the health and status of the modem.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the method and apparatus disclosed by Lim, DOCSIS, DHCP,

Slezak to include a status code indicative of the running status of the modem, as

taught by Koperda, for the benefit of allowing the main circuit to monitor the

health and status of the modem for enhanced reliability and troubleshooting

purposes.

Regarding claim 83, Lim, DOCSIS, DHCP, Slezak, and Koperda disclose

the apparatus of claim 82, but fail to disclose the status code is encrypted.

The official notice taken that it is notoriously well known in the art to

encrypt data packets to enhance security taken by the by examiner was not

successfully traversed by the applicant, and is thus taken by an admission of the

fact presented.

Therefore, it would have been obvious at the time to a person of ordinary

skill in the art to modify the method and apparatus of Lim, Slezak, Caputo, and

Koperda to encrypt the status code, for the benefit of enhancing security.

Regarding claim 84, Lim, DOCSIS, DHCP, Slezak, and Koperda disclose the apparatus of claim 82, but fail to disclose the status code comprises a four byte integer code representing the running status of the modem.

Examiner takes official notice that it is notoriously well known in the art to utilize 4 byte integers as codes within packets, as this represents a very large number of possible unique codes, providing a very comprehensive selection of codes for transmitting information.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method and apparatus disclosed by Lim, DOCSIS, DHCP, Slezak, and Koperda to utilize four byte integer codes representing the running status of the modem, for the benefit of having a wide range of possible status codes available and allowing for very comprehensive reporting of status information.

Regarding claim 85, Lim, DOCSIS, DHCP, Slezak, and Koperda disclose the apparatus of claim 84, but fail to disclose the status code is encrypted.

The official notice taken that it is notoriously well known in the art to encrypt data packets to enhance security taken by the by examiner was not successfully traversed by the applicant, and is thus taken by an admission of the fact presented.

Therefore, it would have been obvious at the time to a person of ordinary

skill in the art to modify the method and apparatus of Lim, DOCSIS, DHCP,

Slezak, and Koperda to encrypt the status code, for the benefit of enhancing

security.

6.   Claims 11 and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Lim, DOCSIS, DHCP, Slezak, and Koperda as applied to claims 7 and 82 above,

and further in view of Rahamim et al. (5,764,694, of record) [Rahamim].

Regarding claim 11, Lim, DOCSIS, DHCP, Slezak, and Koperda disclose

the method of claim 7, but fail to disclose displaying a status of the modem on a

display connected to the Main Circuit Board.

In an analogous art, Rahamim teaches displaying the status of a modem

on a display connected to the host computer (col. 4, lines 15-27), for the benefit

of providing feedback to a user regarding the status of the modem.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the method disclosed by Lim, DOCSIS, DHCP, Slezak, and

Koperda to include displaying a status of the modem on a display connected to

the Main Circuit Board, as taught by Rahamim, for the benefit of providing

feedback to a user regarding the status of the modem, alerting the user of proper

operation and any errors that may occur.

Regarding claim 86, Lim, DOCSIS, DHCP, Slezak, and Koperda disclose the apparatus of claim 82, but fail to disclose displaying a status of the modem on a display connected to the Main Circuit Board.

In an analogous art, Rahamim teaches displaying the status of a modem on a display connected to the host computer (col. 4, lines 15-27), for the benefit of providing feedback to a user regarding the status of the modem.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Lim, DOCSIS, DHCP, Slezak, and Koperda to include displaying a status of the modem on a display connected to the Main Circuit Board, as taught by Rahamim, for the benefit of providing feedback to a user regarding the status of the modem, alerting the user of proper operation and any errors that may occur.

7.   Claims 4, 6, 16, 20, 22, 61, 63, 79, and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim, DOCSIS, DHCP, and Slezak as applied to claims 2, 3, 5, 19, 21, 59, 62, 77, and 80 above, and further in view of Blumenau et al. (US 2003/0115324 A1, of record) [Blumenau].

Regarding claims 4, 6, 20, 22, 61, 63, 79, and 81, Lim, DOCSIS, DHCP, and Slezak disclose the method and apparatus of claims 3, 5, 19, 21, 59, 62, 77, and 80, but fail to disclose the authentication code is encrypted.

In an analogous art, Blumenau teaches encrypting authentication codes to enhance security (paragraph 52).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method and apparatus of Lim, Slezak, and Caputo to encrypt the authentication code, for the benefit of enhancing security.

Regarding claim 16, Lim, DOCSIS, DHCP, and Slezak disclose the method of claim 2, wherein said cable modem is a network device, wherein said network device periodically broadcasts a Discovery Packet over an interconnection from the network device to the Main Circuit Board, by addressing the Discovery Packet to the broadcast address (as described regarding claim 1), the Discovery Packet comprising the IP address of the network device (for discovery of said IP address) and a signature of the network device (transmissions contain at least an identifier of the sender as described in DHCP, page 28, regarding the DCHPACK message format), and at the Main Circuit Board, monitoring the interconnection for broadcast Discovery Packets addressed to the broadcast address, receiving the broadcast Discovery Packet addressed to the Main Circuit Board from the network device (as described regarding claim 1) and ascertaining the IP address of the network device from the broadcast Discovery Packet (as described regarding claim 1).

Lim, DOCSIS, DHCP, and Slezak fail to disclose authenticating the network device from the network device's signature.

In an analogous art, Blumenau teaches authenticating devices that connect to a second device through the use of signatures (expected identifiers

which assure the identities of requesting hosts, paragraph 52), enhancing the

security of a system.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the method disclosed by Lim, DOCSIS, DHCP, and Slezak to

include authenticating the network device from the network device's signature, as

taught by Blumenau, for the benefit of enhancing security.

8.   Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim,

DOCSIS, DHCP, and Slezak as applied to claim 17 above, and further in view of

Rahamim.

Regarding claim 31, Lim, DOCSIS, DHCP, and Slezak disclose the

apparatus of claim 17, but fail to disclose displaying a status of the modem on a

display connected to the Main Circuit Board.

In an analogous art, Rahamim teaches displaying the status of a modem

on a display connected to the host computer (col. 4, lines 15-27), for the benefit

of providing feedback to a user regarding the status of the modem.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, and Slezak to

include displaying a status of the modem on a display connected to the Main

Circuit Board, as taught by Rahamim, for the benefit of providing feedback to a

user regarding the status of the modem, alerting the user of proper operation and

any errors that may occur.

9.   Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim,

DOCSIS, DHCP, and Slezak as applied to claim 18 above, and further in view of Lee

(6,005,937, of record) and Blumenau.

Regarding claim 33, Lim, DOCSIS, DHCP, and Slezak disclose the

apparatus of claim 18, but fail to disclose the apparatus further comprises a

network device interconnected with the Main Circuit Board using an

interconnection; means, residing within said network device for periodically

transmitting a Discovery Packet from said network device to said Main Circuit

Board over said interconnection by addressing the Discovery Packet to a

broadcast address monitored by the Main Circuit Board; and wherein the

Discovery Packet comprises at least an IP address of the network device and a

signature, wherein the Main Circuit Board distinguishes between the modem and

the network device by the signature.

In an analogous art, Lee teaches incorporating plural modules into a set

top box (col. 4, lines 52-65) including a separately addressable network interface

module (fig. 1, data communication module 170, col. 5, lines 40-61)

interconnected with the Main Circuit Board (fig. 1, control PCB 110) for enhanced

flexibility.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, and Slezak to

include a separately addressable network device interconnected with the Main

Circuit Board for increasing the flexibility of the set top box by allowing it to

connect to another type of network using the network device. The device is

separately addressable, and thus has it's own IP address, and conforms to the

same form of IP address notification as the modem.

Lim, DOCSIS, DHCP, Slezak, and Lee fail to disclose the Main Circuit

Board distinguishes between the modem and the network device by the

signature.

In an analogous art, Blumenau teaches using identifier information to

verify individual devices and discriminate between them (paragraphs 51 and 52)

to enhance security.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, Slezak, and Lee

to include distinguishing between the modem and network device by the

signatures provided by each, as taught by Blumenau, for the benefit of enhancing

security, for example, by preventing one device from copying another to redirect

information in any unauthorized manner.

10.   Claims 34-37, and 91 rejected under 35 U.S.C. 103(a) as being unpatentable

over Lim in view of DOCSIS, DHCP, Slezak, DeBettencourt, Caputo (5,675,831, of

record), Blumenau, Koperda, Bernardini, and Rahamim.

Regarding claims 34 and 91, Lim discloses a client system (fig. 1, client

system 102, col. 4, lines 47-54) configured with a modem (fig. 1, cable modem

104) and a Main Circuit Board having a first processor (an inherent feature of

computer based client systems), and interconnected to the modem via an

interconnection (as shown by the interconnection between 102 and 104 in fig. 1),

wherein the Main Circuit Board monitors the interconnection for packets

addressed to a broadcast address (also inherent, else the Main Circuit Board

would not receive packets addressed to it);

a second programmed processor, residing within said modem (an inherent

feature, as the modem is an external modem, and thus requires its own

processor and memory resources).

Lim fails to disclose the second processor transmits a Discovery Packet

from said modem to the broadcast address monitored by said Main Circuit Board

via said interconnection, wherein the Discovery Packet comprises an IP address

of the modem at intervals, client system is a set top box, the intervals are

approximately 30 seconds, the Discovery Packet includes an encrypted ten

character ASCII authentication code, the Main Circuit Board inspects the

authentication code to assure that the IP address in the Discovery Packet

originated at the modem, the Discovery Packet further comprises a four byte

integer status code indicative of a running status of the modem, and a display,

coupled to the Main Circuit Board, displaying the status of the modem

determined by the Main Circuit Board by reading the four byte integer status

code of the Discovery Packet.

In an analogous art, DOCSIS teaches a standardized format for enabling communications between a cable modem and customer premises equipment (page 9, section 1.1), wherein adherence to said standard is to include in the cable modem an internal DHCP server (see fig. 3-3), wherein the existence of an internal DHCP server within the modem is used for reference and informational purposes regarding the IP address of the modem (see fig. 3-1 and table 3-1).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Lim to include an internal DHCP server in the modem, as taught by DOCSIS, for the benefit of conforming to the established DOCSIS standard for cable modem communications.

Lim and DOCSIS fail to disclose the second processor transmits a Discovery Packet from said modem to the broadcast address monitored by said Main Circuit Board via said interconnection, wherein the Discovery Packet comprises an IP address of the modem at intervals, client system is a set top box, the intervals are approximately 30 seconds, the Discovery Packet includes an encrypted ten character ASCII authentication code, the Main Circuit Board inspects the authentication code to assure that the IP address in the Discovery Packet originated at the modem, the Discovery Packet further comprises a four byte integer status code indicative of a running status of the modem, and a display, coupled to the Main Circuit Board, displaying the status of the modem determined by the Main Circuit Board by reading the four byte integer status code of the Discovery Packet.

In an analogous art, DHCP teaches allocation of IP addresses to clients (page 12, section 2.2) involves 'leasing' an IP address for a finite period of time (page 20, section 3.3), wherein there is a periodic exchange of messages between the server and client during the RENEWING state of an IP lease (page 32, DHCPREQUEST generated during a RENEWING state, and page 35, fig. 5, which shows the periodic exchange of DHCPREQUEST and DHCPACK messages between a client and server, see also page 40, section 4.4.5), wherein the DHCPACK messages contain the IP address being leased (in the yiaddr field, as shown on page 28), and the DHCPACK message is utilized by the client to learn the IP address (for renewing the lease). The DHCP specification suggests that DHCP should be used to reacquire or verify IP addresses and network parameters in local networks, as local network configurations may change without the client's or user's knowledge (page 22, section 3.7).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Lim and DOCSIS to include transmitting a Discovery Packet [DHCPACK] from said modem [the internal DHCP server] to the broadcast address monitored by said Main Circuit Board via said interconnection, wherein the Discovery Packet comprises an IP address of the modem at intervals, as taught by DHCP, for the benefit of verifying IP addresses in local networks, as local network configurations may change without the client's or user's knowledge.

Lim, DOCSIS, and DHCP fail to disclose the client system is a set top box, the intervals are approximately 30 seconds, the Discovery Packet includes an encrypted ten character ASCII authentication code, the Main Circuit Board inspects the authentication code to assure that the IP address in the Discovery Packet originated at the modem, the Discovery Packet further comprises a four byte integer status code indicative of a running status of the modem, and a display, coupled to the Main Circuit Board, displaying the status of the modem determined by the Main Circuit Board by reading the four byte integer status code of the Discovery Packet.

In an analogous art, Slezak teaches connecting a set top box to a cable modem, providing Internet access and specialized content to a user via their television (col. 4 line 65 – col. 5 line 10).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Lim, DOCSIS, and DHCP to interconnect the modem to a set top box, as taught by Slezak, for the benefit of providing Internet access and specialized content to a user via their television, enhancing functionality to their television systems.

Lim, DOCSIS, DHCP, and Slezak fail to disclose the intervals are approximately 30 seconds, the Discovery Packet includes an encrypted ten character ASCII authentication code, the Main Circuit Board inspects the authentication code to assure that the IP address in the Discovery Packet originated at the modem, the Discovery Packet further comprises a four byte

integer status code indicative of a running status of the modem, and a display, coupled to the Main Circuit Board, displaying the status of the modem determined by the Main Circuit Board by reading the four byte integer status code of the Discovery Packet.

In an analogous art, DeBettencourt, teaches that it is well known to periodically broadcast information every 30 seconds (col. 10, lines 6-8).

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, and Slezak to transmit the Discovery Packet approximately every 30 seconds, as taught by DeBettencourt, for the benefit of performing the periodic broadcast in a convenient time frame.

Lim, DOCSIS, DHCP, Slezak, and DeBettencourt fail to disclose the Discovery Packet includes an encrypted ten character ASCII authentication code, the Main Circuit Board inspects the authentication code to assure that the IP address in the Discovery Packet originated at the modem, the Discovery Packet further comprises a four byte integer status code indicative of a running status of the modem, and a display, coupled to the Main Circuit Board, displaying the status of the modem determined by the Main Circuit Board by reading the four byte integer status code of the Discovery Packet.

In an analogous art, Caputo teaches naming modems using a unique string of characters, wherein said string would consist of 10 characters at the

discretion of the developer, allowing a modem to identify itself to connected

devices, col. 9, lines 21-32.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, Slezak, and

DeBettencourt to associate a unique string of characters with the modem with

which the modem would identify itself, as taught by Caputo, wherein the string

would be 10 characters long when the developer decides to make it so, and this

string would be included in the Discovery Packet so as to identify the modem to

the Set Top Box said modem is in communication with.

Lim, DOCSIS, DHCP, Slezak, DeBettencourt, and Caputo fail to disclose

encrypting the ten character ASCII authentication code, and the Discovery

Packet further comprises a four byte integer status code indicative of a running

status of the modem, and a display, coupled to the Main Circuit Board, displaying

the status of the modem determined by the Main Circuit Board by reading the

four byte integer status code of the Discovery Packet.

In an analogous art, Blumenau teaches encrypting authentication codes to

enhance security (paragraph 52).

It would have been obvious at the time to a person of ordinary skill in the

art to modify the method of Lim, DOCSIS, DHCP, Slezak, DeBettencourt, and

Caputo to encrypt the authentication code, for the benefit of enhancing security.

Lim, DOCSIS, DHCP, Slezak, DeBettencourt, Caputo, and Blumenau fail

to disclose the Discovery Packet further comprises a four byte integer status

code indicative of a running status of the modem, and a display, coupled to the

Main Circuit Board, displaying the status of the modem determined by the Main

Circuit Board by reading the four byte integer status code of the Discovery

Packet.

In an analogous art, Koperda teaches providing status information from a

modem to a main circuit (col. 12, lines 13-19), for the benefit of allowing the main

circuit to monitor the health and status of the modem.

It would have been obvious at the time to a person of ordinary skill in the

art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, Slezak,

DeBettencourt, Caputo, and Blumenau to include a status code indicative of the

running status of the modem, as taught by Koperda, for the benefit of allowing

the main circuit to monitor the health and status of the modem for enhanced

reliability and troubleshooting purposes.

Lim, DOCSIS, DHCP, Slezak, DeBettencourt, Caputo, Blumenau, and

Koperda fail to disclose the status code is a four byte integer, and a display,

coupled to the Main Circuit Board, displaying the status of the modem

determined by the Main Circuit Board by reading the four byte integer status

code of the Discovery Packet.

In an analogous art, Bernardini, teaches that it is well known to utilize 4

byte integers as codes (col. 5, lines 13-15).

It would have been obvious at the time to a person of ordinary skill in the

art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, Slezak,

DeBettencourt, Caputo, Blumenau, and Koperda to utilize four byte integer codes representing the running status of the modem, for the benefit of having a wide range of possible status codes available and allowing for very comprehensive reporting of status information.

Lim, DOCSIS, DHCP, Slezak, DeBettencourt, Caputo, Blumenau, Koperda, and Bernardini fail to disclose a display, coupled to the Main Circuit Board, displaying the status of the modem determined by the Main Circuit Board by reading the four byte integer status code of the Discovery Packet.

In an analogous art, Rahamim teaches displaying the status of a modem on a display connected to the host computer (col. 4, lines 15-27), for the benefit of providing feedback to a user regarding the status of the modem.

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, Slezak, DeBettencourt, Caputo, Blumenau, Koperda, and Bernardini to include displaying a status of the modem on a display connected to the Main Circuit Board, as taught by Rahamim, for the benefit of providing feedback to a user regarding the status of the modem, alerting the user of proper operation and any errors that may occur.

Regarding claim 35, Lim, DOCSIS, DHCP, Slezak, DeBettencourt, Caputo, Blumenau, Koperda, Bernardini, and Rahamim disclose the apparatus of claim 34, wherein the modem is a cable modem (Lim, fig. 1, cable modem 104).

Regarding claim 36, Lim, Slezak, DeBettencourt, Caputo, Blumenau,

Koperda, Bernardini, and Rahamim disclose the apparatus of claim 34, wherein

the Discovery Packet uses User Datagram Protocol (DOCSIS, fig. 3-3, wherein

signals sent from the internal DHCP server of the modem first passes through a

UDP stack before being passed along to the host CPE).

Regarding claim 37, Caputo additionally discloses using PCI bus

interconnections (col. 4, lines 38-56) to connect an external modem to a

computer.

11.   Claims 66, 72, and 73 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lim in view of DOCSIS, DHCP, Slezak, and Lee.

Regarding claim 66, Lim discloses a client system (fig. 1, client system

102, col. 4, lines 47-54) configured with a first managed component (fig. 1, cable

modem 104) and a Main Circuit Board (an inherent feature of computer based

client systems), connected to the first managed component via an

interconnection (as shown by the interconnection between 102 and 104 in fig. 1);

Lim fails to disclose the means, residing within the first managed

component, for periodically transmitting a Discovery Packet to the Main Circuit

Board by addressing the Discovery Packet to a broadcast address monitored by

said Main Circuit Board via the interconnection wherein the Discovery Packet

comprises the IP address of the managed component from which is was

transmitted in order to permit the Main Circuit Board to learn the managed

component's IP address, and the client system is a set top box that also includes

a second managed component which also periodically transmits a Discovery

Packet containing the second managed component's IP address.

In an analogous art, DOCSIS teaches a standardized format for enabling

communications between a cable modem and customer premises equipment

(page 9, section 1.1), wherein adherence to said standard is to include in the

cable modem an internal DHCP server (see fig. 3-3), wherein the existence of an

internal DHCP server within the modem is used for reference and informational

purposes regarding the IP address of the modem (see fig. 3-1 and table 3-1).

It would have been obvious at the time to a person of ordinary skill in the

art to modify the system disclosed by Lim to include an internal DHCP server in

the modem, as taught by DOCSIS, for the benefit of conforming to the

established DOCSIS standard for cable modem communications.

Lim and DOCSIS fail to disclose the internal DHCP server means, residing

within the first managed component, periodically transmits a Discovery Packet to

the Main Circuit Board by addressing the Discovery Packet to a broadcast

address monitored by said Main Circuit Board via the interconnection wherein the

Discovery Packet comprises the IP address of the managed component from

which is was transmitted in order to permit the Main Circuit Board to learn the

managed component's IP address, and the client system is a set top box that

also includes a second managed component which also periodically transmits a

Discovery Packet containing the second managed component's IP address.

In an analogous art, DHCP teaches allocation of IP addresses to clients

(page 12, section 2.2) involves 'leasing' an IP address for a finite period of time

(page 20, section 3.3), wherein there is a periodic exchange of messages

between the server and client during the RENEWING state of an IP lease (page

32, DHCPREQUEST generated during a RENEWING state, and page 35, fig. 5,

which shows the periodic exchange of DHCPREQUEST and DHCPACK

messages between a client and server, see also page 40, section 4.4.5), wherein

the DHCPACK messages contain the IP address being leased (in the yiaddr

field, as shown on page 28), and the DHCPACK message is utilized by the client

to learn the IP address (for renewing the lease). The DHCP specification

suggests that DHCP should be used to reacquire or verify IP addresses and

network parameters in local networks, as local network configurations may

change without the client's or user's knowledge (page 22, section 3.7).

It would have been obvious at the time to a person of ordinary skill in the

art to modify the system disclosed by Lim and DOCSIS to include performing by

the internal DHCP server means, residing within the first managed component,

periodic transmission of a Discovery Packet [DHCPACK] to the Main Circuit

Board by addressing the Discovery Packet to a broadcast address monitored by

said Main Circuit Board via the interconnection wherein the Discovery Packet

comprises the IP address of the managed component from which is was

transmitted in order to permit the Main Circuit Board to learn the managed component's IP address, as taught by DHCP, for the benefit of verifying IP addresses in local networks, as local network configurations may change without the client's or user's knowledge.

Lim, DOCSIS, and DHCP fail to disclose the client system is a set top box that also includes a second managed component which also periodically transmits a Discovery Packet containing the second managed component's IP address.

In an analogous art, Slezak teaches connecting a set top box to a cable modem, providing Internet access and specialized content to a user via their television (col. 4 line 65 – col. 5 line 10).

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus disclosed by Lim, DOCSIS, and DHCP to interconnect the first managed component to a set top box, as taught by Slezak, for the benefit of providing Internet access and specialized content to a user via their television, enhancing functionality to their television systems.

In an analogous art, Lee teaches incorporating plural modules into a set top box (col. 4, lines 52-65) including a separately addressable network interface module (fig. 1, data communication module 170, col. 5, lines 40-61) interconnected with the Main Circuit Board (fig. 1, control PCB 110) for enhanced flexibility.

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, and Slezak to include a second separately addressable network device interconnected with the Main Circuit Board for increasing the flexibility of the set top box by allowing it to connect to another type of network using the network device. The device is separately addressable, and thus has it's own IP address, and beneficially conforms to the same form of IP address notification as the modem.

Regarding claim 72, Lim, DOCSIS, DCHP, Slezak, and Lee disclose the apparatus of caim 66, wherein the Discovery Packet uses User Datagram Protocol (DOCSIS, fig. 3-3, wherein signals sent from the internal DHCP server of the modem first passes through a UDP stack before being passed along to the host CPE).

Regarding claim 73, Lim, Slezak, and Lee disclose the apparatus of claim 66, but fail to disclose the interconnection is a USB interconnection (DOCSIS, fig. 3-3).

12.   Claims 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim, DOCSIS, DHCP, Slezak, and Lee as applied to claim 66 above, and further in view of Caputo.

Regarding claims 67 and 68, Lim, Slezak, and Lee disclose the apparatus

of claim 66, but fail to disclose the Discovery Packet comprises a multiple

character ASCII string authentication code which the Main Circuit Board inspects

to determine which of the first and second managed components that the IP

address in the Discovery Packet corresponds to.

In an analogous art, Caputo teaches naming modems using a unique

string of characters, allowing a modem to identify itself to connected devices (col.

9, lines 21-32).

It would have been obvious at the time to a person of ordinary skill in the

art to modify the apparatus disclosed by Lim, Slezak, and Lee to associate a

unique string of characters with each of the managed components would identify

each managed component, as taught by Caputo, and this string would be

included in the Discovery Packet so as to identify the managed component to the

Set Top Box said managed component is in communication with.

13.   Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim,

DOCSIS, DHCP, Slezak, Lee, and Caputo as applied to claim 67 above, and further in

view of Blumenau.

Regarding claim 69, Lim, DOCSIS, DHCP, Slezak, Lee, and Caputo

disclose the apparatus of claim 67, but fail to disclose the authentication code is

encrypted.

In an analogous art, Blumenau teaches encrypting authentication codes to enhance security (paragraph 52).

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus of Lim, DOCSIS, DHCP, Slezak, Lee, and Caputo to encrypt the authentication code, as taught by Blumenau, for the benefit of enhancing security.

14.   Claims 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim, DOCSIS, DHCP, Slezak, Lee, Caputo, and Blumenau as applied to claim 69 above, and further in view of Koperda.

Regarding claim 70, Lim, DOCSIS, DHCP, Slezak, Lee, Caputo, and Blumenau disclose the apparatus of claim 69, but fail to disclose the Discovery Packet further comprises a status code indicative of the running status of the managed component.

In an analogous art, Koperda teaches providing status information from a modem to a main circuit (col. 12, lines 13-19), for the benefit of allowing the main circuit to monitor the health and status of the modem.

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus disclosed by Lim, DOCSIS, DHCP, Slezak, Lee, Caputo, and Blumenau to include a status code indicative of the running status of the managed component, as taught by Koperda, for the benefit of allowing the

main circuit to monitor the health and status of the modem for enhanced

reliability and troubleshooting purposes.

Regarding claim 71, Lim, DOCSIS, DHCP, Slezak, Lee, Caputo,

Blumenau, and Koperda disclose the apparatus of claim 70, but fail to disclose

the status code is encrypted.

The official notice taken that it is notoriously well known in the art to

encrypt data packets to enhance security was not successfully traversed by the

applicant and is thus taken as an admission of the fact presented.

Therefore, it would have been obvious at the time to a person of ordinary

skill in the art to modify the method of Lim, DOCSIS, DHCP, Slezak, Lee,

Caputo, Blumenau, and Koperda to encrypt the status code, for the benefit of

enhancing security.

Conclusion

15.   **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded

of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dominic D. Saltarelli whose telephone number is (571)

272-7302. The examiner can normally be reached on Monday - Friday 7:00am -

4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Christopher Grant can be reached on (571) 272-7294. The fax phone

number for the organization where this application or proceeding is assigned is 703-

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